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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/633,207	08/01/2003	Robert J. Petcavich	937-1535	3285

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EXAMINER

CHAWLA, JYOTI

ART UNIT	PAPER NUMBER
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1761

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Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 10/633,207	Applicant(s) PETCAVICH, ROBERT J.	
	Examiner Jyoti Chawla	Art Unit 1761	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) 7-11 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>8/1/2003</u> | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION***Election/Restrictions***

Applicant's election with traverse of Process of coating post harvest produce (Group I) in the reply filed on May 5, 2006 is acknowledged. The traversal is on the ground(s) that there is no serious burden on the examiner for searching the process and the composition comprising polyvinylidene chloride and a surfactant. This is not found persuasive because in the instant case the coating composition can be used to coat non- edible objects. Aqueous emulsions of polyvinylidene copolymer can be used to coat e.g., china, glass, metal and plastic or fabric objects or parts of machines that are to be assembled later and need to be made weather resistant.

Because these inventions are independent or distinct for the reasons given above and have acquired a separate status in the art in view of their different classification, restriction for examination purposes as indicated in the office action dated April 5, 2006 is still deemed proper and is therefore made FINAL.

Claims 1-6 drawn to the elected invention are examined in the application and claims 7-11 drawn to the non-elected invention have been withdrawn.

Specification

Specification paragraph 0028, line 2 "from about 0.05% to %%" needs correction.

Paragraph 0029, line 3 "delay n the time", should be "delay in the time".

Paragraph 0030, line 4 states "preservation it either", it should be replaced by "in".

Please make the appropriate corrections.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "fresh " in claim 1, is a relative term which renders the claim indefinite. The term "fresh" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. The term "fresh" may mean different things to different people, e.g., one may consider just plucked fruit as fresh while others may consider a day old or a week old produce fresh. The term fresh is also used for contrasting produce with canned, cooked or frozen. Clarification and/ or correction is required.

The statement of claim 3 states "A process set forth in claim 1 wherein the surfactant is Triton-X45, Tergitol, and polysorbate or dioctyl sodium sulfosuccinate." Claims 3 makes use of indefinite language. It is unclear whether the surfactant is one of the four, or is it Triton-X45 or a combination of Tergitol and polysorbate or a combination of Tergitol and dioctyl sodium sulfosuccinate or any other combination. Clarification and/ or correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Scott et al (US 2872325).

Scott et al., hereinafter Scott, teaches a process of coating perishable foods by an emulsion of polymerized vinylidene chloride, i.e., polyvinylidene chloride (Column 2, lines 20-30), by dispersing in an aqueous phase with 1-5% emulsifier (surfactant) and an additional surface-active agent (Column 3, lines 36-58). Scott teaches solids content of 10-25% (Column 3, lines 2-5), and polyvinylidene chloride content of 88-91% of the total polymer (Column 2, line 25). Therefore Scott teaches polyvinylidene chloride content of 8.8 to 22.75% of the coating composition, which falls in applicant's recited range for claim 1.

Regarding claim 2, Scott teaches Polyvinylidene chloride copolymer consists of 88-91% polyvinylidene chloride and 9-12% acrylonitrile (acrylic acid) as recited by the applicant (Column 2, lines 20-27).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

Determining the scope and contents of the prior art.
Ascertaining the differences between the prior art and the claims at issue.
Resolving the level of ordinary skill in the pertinent art.
Considering objective evidence present in the application indicating obviousness or nonobviousness.

(A) Claims 3, 4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scott as applied to claims 1 and 2 above, in view of Yang et al (US 6165529).

Regarding claim 3, Scott teaches a coating composition for produce containing polyvinylidene chloride polymer and surfactant as discussed above. However Scott does not teach the specific emulsifiers /surfactants recited by the applicant. Yang et al, hereinafter Yang, teaches a composition and method for coating fresh produce. The coating composition taught by Yang contains 0.03-5% dioctyl sodium sulfosuccinate (Column 3, lines 29-30) as surfactant, as recited by the applicant. A surfactant is needed to stabilize an emulsion and Dioctyl Sodium Sulfosuccinate (DSS) is an anionic surfactant, which is soluble in organic solvents as well as in water. DSS has detergent

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properties that make it useful for cleaning and peeling fruits and vegetables and cleaning food packaging and in various pharmaceutical products. Therefore it would have been obvious to one with ordinary skill in the art to modify Scott and replace the surfactants taught by Scott, with Dioctyl Sodium Sulfosuccinate (DSS) in the coating composition to make the composition more stable and more suitable for perishable food items especially the ones with thin or no peelable coverings. The coating composition thus produced would contain an effective, non-toxic and widely tested surfactant.

Regarding claim 4, Scott teaches a coating composition for produce with antimicrobial agents (Column 3, lines 12-13) but he does not teach the actual amount of these agents in the coating composition. Since Scott does not disclose a specific range for antimicrobial agent, one of ordinary skill in the art would have been motivated to look to the art to find a similar product with antimicrobial agent. Yang teaches a coating composition for post harvest produce and composition taught by Yang contains 0.05-5% antimicrobial agents, such as triclosan or methylparaben (Column 3, lines 31-33), which encompasses the range taught by applicant in claim 4. It would have been obvious to one with ordinary skill in the art to modify coating composition taught by Scott and specify the amount of antimicrobial agent as taught by Yang because the amount of antimicrobial agent in the coating composition would help determine the strength or suitability of coating under different conditions. One would have been motivated to do so to specify the type of produce, length of storage (transportation/ ripening) and the storage conditions (humidity, temperature etc.) for which the coating composition would be effective.

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Regarding claim 6, Scott is silent as to the addition of antifoam in the coating composition for produce. Unwanted foaming was a known problem in making emulsions and it could be solved by the addition of antifoaming agents. Yang teaches addition of an antifoaming agent, such as polydimethylsiloxane, to the coating composition in a range 0.001 to 0.005% (Column 3, lines 34-36), which falls within the recited range of the applicant. One of ordinary skill in the art would have been motivated to modify Scott based on the teachings from Yang, and employ an antifoaming agent in the coating emulsion in order to avoid unwanted foam. One would have been further motivated to use an inert chemical antifoams based on silicone, such as polydimethylsiloxane, because silicone based chemical antifoams are quick acting due to lower surface tension, they are non-reactive to other process media and can be added to most compositions, and also remain effective for longer time.

(B) Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Scott as applied to claims 1 and 2 above, in view of Bice et al (US 3674510).

Regarding claim 5, Scott teaches a coating composition for produce with antifungal agents (Column 3, lines 12-13) but he does not teach the actual amount of these agents in the coating composition. Bice et al, hereinafter Bice, teaches a coating composition for produce containing an antifungal agent (Abstract and Column 3, lines 48-55). Bice teaches that 0.4-2 parts per million, i.e., 400-2000 parts per billion of an antifungal compound 2-(4-thiazolyl) benzimidazole (hereinafter TBZ), based on the weight of fruit (Abstract, Column 3, lines 73-75 and Column 4, specially lines 40-45), would be

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appropriate for fruit stored for about three weeks at a temperature of 45-50 °F or for one week at 65-75 °F. Thus Bice teaches that one would have been motivated to modify the amount of antifungal agent in the composition to suit the particular situation, i.e., desired storage time, temperatures, and other available storage/ transportation conditions. One would have been motivated to use the lowest range effective at the desired storage and transportation conditions in order to reduce cost of material and also minimize excessive use of chemicals. Since Scott does not disclose a specific range for the antifungal agent, one of ordinary skill in the art would have been motivated to look to the art to find a similar product used to retard fungal growth in post-harvest produce in order to produce the disclosed invention and since Bice teaches the amount of antifungal agent that would retard the fungal growth in stored produce (encompasses applicant's recited range), one would have a reasonable expectation of success.

Remarks/Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Lambert et al (EP 0755990 A2) teach a coating composition for fruits comprising about an aqueous emulsion that can be used as an adhesive or coating (Page 3, line 52 and page 4, line) of from about 5-95% by weight of polyvinylidene chloride and its copolymers (Page 2, lines 38-40 and page 3 specially lines 18-35), and from about 0.1-5% by weight surfactant (Page 3, lines 51-56). Lambert also teaches polyvinylidene copolymers with vinyl chloride and acrylic polymers as recited by the applicant as well

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as addition of Hydrogen Peroxide and ammonia, i.e., antimicrobial, antifungal, to the polymer coating (Page 4, example 1).

(See also Lambert pages 4-6 for example I).

Liu (US 4710388) teaches coating composition for fruit with surfactants.


C.F.De Long et al (US 3669691) teach coating fresh produce.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jyoti Chawla whose telephone number is (571) 272-8212. The examiner can normally be reached on 8:00 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Milton Cano can be reached on (571) 272-1398. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jyoti Chawla
Examiner
Art Unit 1761


KEITH HENDRICKS
PRIMARY EXAMINER